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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,345	07/25/2000	Paul Timothy Spivey	LE9-00-022	7549

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LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

EXAMINER
TRAN, LY T

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/625,345	SPIVEY ET AL.	
	Examiner	Art Unit	
	Ly T TRAN	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE filed 1/21/03* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17 and 19-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17 and 19-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Allowable Subject Matter

1. For further consideration, the indicated of allowability of claims 8-14 is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 9-12, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipate by Kobayashi (USPN 6,033,581).

With respect to claim 9, Kobayashi discloses a heater chip assembly for use in an ink jet print head comprising:

- A heater chip including a backside having at least one cavity (Fig.3: element 3)

- Adhesive substantially entirely disposed within at least one cavity, the adhesive configured for adhering the backside of the heater chip to a substrate (Fig.6: element 1,6,9)

With respect to claim 10, Kobayashi discloses the cavity comprises at least one trench (Fig.2).

With respect to claim 11, Kobayashi discloses the heater chip includes at least one ink via (Fig.2: element 2, Column 5: line 13-14)).

With respect to claim 12, Kobayashi discloses at least one trench substantially surrounds each via (Fig.2)

With respect to claims 15 and 16, Kobayashi discloses a method of assembling an ink jet print head comprising:

- Micro-machining at least one cavity in a backside of a heater chip (Column 5: line 40-42).
- Adhering the backside of the heater chip to a substrate such that adhesive is at least partially disposed within at last one cavity (Fig.6: element 1, 3, 6, 9)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (USPN 5,821,961) in view of Harvey (USPN 5,779,837).

With respect to claims 1 and 8, Sato discloses an ink jet print head assembly comprising:

- A heater chip (Fig.2: element 100)
- A substrate having a substantially flat surface (Fig.2: element 300)
- The heater chip is being glue to the substrate (Column 4: line 18-19)

However, Sato fails to teach the heater chip having a cavity and adhesive at least disposed within the at least one cavity.

Harvey teaches the groove formed in the outer wall of the base (Fig.4: element 10, 30, 32),

With respect to claims 2 and 4, Harvey teaches at least one cavity comprises at least one trench (Fig.4: element 32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Sato to have the groove/cavity on the heater chip as taught by Harvey. The motivation of doing so is to provide a channel into which excess glues may flow, further if excess glue is provided in the quantity to fill the grooves, it can more readily flow along the grooves and escape.

With respect to claim 3, Sato teaches the heater chip includes at least one ink via (Column 3: line 52-55).

With respect to claim 5, since Sato discloses the heater chip includes a plurality of ink via and heater chip (100) is being glue to the substrate (300), it's inherently that

the adhesive being configured for preventing fluid communication between the plurality of ink via n an area defined between the heater chip and the substrate.

4. Claims 6-7are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (USPN 5,821,961) in view of Harvey (USPN 5,779,837) as applied to claim 1 above, further in view of Brandon et al. (USPN 5,751,324).

Sato teaches that the heater chip includes at least one outside edge (Fig. 2).

However, The combination of Sato and Harvey fails to teach at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing.

Brandon et al. teaches at least one trench (Fig.4: element 44+46) extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing (Column 2: line 61-63).

While Brandon does not teach providing the trenches in a heater chip, it does provide the general teaching to one of ordinary skill in the art of providing trenches extending to at least one outside edge at a bonding site for the purpose of allowing the adhesive to outgas during curing.

It would have been obvious to one having skill in the art at the time the invention was made to modify the teaching of Sato and Harvey to have at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing as taught by

Brandon et al. The motivation of doing so is the gas produced during of the adhesive is vented to the outside ambient environment.

5. Claims 13-14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (USPN 6033,581) in view of Brandon et al. (USPN 5,751,324).

Kobayahi teach that the heater chip includes at least one outside edge (Fig. 6).

However, Kobayashi fail to teach at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing.

Brandon et al. teaches at least one trench (Fig.4: element 44+46) extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing (Column 2: line 61-63).

While Brandon does not teach providing the trenches in a heater chip, it does provide the general teaching to one of ordinary skill in the art of providing trenches extending to at least one outside edge at a bonding site for the purpose of allowing the adhesive to outgas during curing.

It would have been obvious to one having skill in the art at the time the invention was made to have provided the invention of Kobayashi with at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing as taught by Brandon et al. The motivation of doing so is the gas produced during of the adhesive is vented to the outside ambient environment.

6. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (USPN 6,033,581) in view of Mey et al. (USPN 5,821,972).

Kobayashi discloses the claimed invention except the forming a cavity using dicing or laser ablation. Mey et al. shows that cutting using a diamond saw and laser ablation (Column 4: line 25-47) is an equivalent structure known in the art. Therefore, because these two structures were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute diamond saw for laser ablation.

Response to Arguments

7. Applicant's arguments with respect to claims 1-5 and 8 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's argument that the support (6) in Kobayashi's invention is not a flat surface is persuasive but is moot in view of Sato and Harvey.

8. Applicant's arguments filed 1/21/03 have been fully considered but they are not persuasive.

Applicant's argument that Kobayashi does not teach the groove (3) is formed by micro-machining is not persuasive because refer to column 5; line 41-42, Kobayashi teach that the groove is formed in the substrate 1 by mechanical processing. Therefore Kobayashi meets the limitation of the claim.

Applicant's argument that Kobayashi does not teach the adhesive substantially entirely disposed within at least one cavity is not persuasive because refer to figure 6,

the adhesive 9 is filled in the cavity 3 and very clearly that the adhesive is substantially entirely disposed in cavity. The claim recites: "adhesive substantially entirely disposed within at least one cavity" which is meant that the adhesive almost filled up into the cavity, nothing in the claim recite that the amount of adhesive goes into the cavity is 80 or 90% of total of the adhesive or substantially entirely of the total amount of adhesive use to adhere the heater and the substrate together. Therefore, Kobayashi still meets the limitation of the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.

LAMSON NGUYEN
PRIMARY EXAMINER
03/19/03

March 13, 2003